

**2024/TDC (CBCS)/EVEN/SEM/
BTCHCC-403T/006**

TDC (CBCS) Even Semester Exam., 2024

BIOTECHNOLOGY

(4th Semester)

Course No. : BTCHCC-403T

(Chemistry—II)

Full Marks : 50

Pass Marks : 20

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

UNIT—I

- 1.** Answer any *two* of the following questions : $2 \times 2 = 4$
- (a) Write a note on nomenclature of organic molecules.
 - (b) Write about influence of hybridization on bond properties.
 - (c) Write a note on classification of organic molecules.

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(Turn Over)



(2)

2. Answer any *one* of the following questions : 6

- (a) Give an account of inductive and electromeric effects. Add a note on mesomeric effect. $2+2+2=6$
- (b) Write a note on hyperconjugation and its applications. Give a short account of dipole moment. $4+2=6$

UNIT—II

3. Answer any *two* of the following questions : $2 \times 2 = 4$

- (a) Differentiate between homolytic fission and heterolytic fission.
- (b) Write a note on addition reaction.
- (c) Write about elimination reaction.

4. Answer any *one* of the following questions : 6

- (a) Write notes on electrophiles and nucleophiles. $3+3=6$
- (b) Give an account of carbocations and carbanions. Add a note on free radicals. $4+2=6$

UNIT—III

5. Answer any *two* of the following questions : $2 \times 2 = 4$

- (a) Write a note on enantiomers.

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(b) Give a brief account of diastereoisomers.

(c) Write about relative and absolute configuration.

6. Answer any *one* of the following questions : 6

- (a) Write the features of optical activity and specific rotation. Add a note on chirality. $4+2=6$
- (b) Give a detailed account of racemic mixture and resolution.

UNIT—IV

7. Answer any *two* of the following questions : $2 \times 2 = 4$

- (a) Write a note on formation of alkanes.
- (b) Give a short account of halogenation.
- (c) Write a note on aliphatic hydrocarbons.

8. Answer any *one* of the following questions : 6

- (a) Give an account of carbon-carbon sigma bonds. Add a note on Wurtz-Fittig reactions. $3+3=6$
- (b) Describe the mechanism of E1 and E2 reactions. Write about Saytzeff and Hofmann eliminations. $3+3=6$

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(4)

UNIT—V

9. Answer any *two* of the following questions : $2 \times 2 = 4$

(a) Write a note on heterocyclic compounds.

(b) Give a brief account of nitration.

(c) Write a note on sulphonation.

10. Answer any *one* of the following questions : 6

(a) Write a brief account of Huckel's rule.
Add a note on aromatic character of arenes. $3+3=6$

(b) Give an illustrated account of Friedel-Crafts alkylation and acylation.
